

REMARKS

The Office action of January 28, 2004 has been received and its contents carefully noted.

Claims 1-2, 4-6, and 8 are pending in the application. Claims 1-2, and 4-5 have been amended. Claims 3 and 7 have been canceled making the rejection to Claim 7 moot. Claim 8, incorporating the subject matter of former claim 3, has been added and therefore should be deemed allowable along with dependent Claim 4 in accordance with the Action.

Claims 1-2, and 5-6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Parulski et al. ("Parulski") (U.S. Patent No. 5,828,406) in view of Alston (U.S. Patent No. 4,541,010) and Chang (U.S. Patent No. 5,264,939). Claim 7 stands rejected under § 102(b) as being unpatentable over Chang. Applicants respectfully traverse these rejections, and requests allowance thereof in the continuation prosecution application for the following reasons.

The Claims are Patentable Over the Cited References

Claims 1-2, and 5-6 are not made obvious by Parulski, Alston, and Chang

Claims 1-2, and 5-6 stand rejected under § 103(a) in view of Parulski, Alston, and Chang. Parulski, Alston, and Chang, either alone or in combination, fail to disclose the features recited in these claims as amended such as a solid-state image pickup

apparatus having an image pickup section, the image pickup section including a color separating section including color filters assigned to three primary colors R (red), G (green) and B (blue) for separating colors of light incident from a desired scene, the color filters assigned to the color G being arranged in vertical stripes, the color filters assigned to the colors R and B being arranged diagonally with respect to the color filters assigned to the color G, and a plurality of photosensitive cells arranged bidimensionally in one-to-one correspondence to said color filters each for transforming light output from a particular color filter to a corresponding signal charge, each of said plurality of photosensitive cells being shifted in position by half a pitch from adjoining ones of said photosensitive cells.

In contrast to the recited features, Parulski discloses a an electronic camera having a processor for mapping pixels which uses a sensor 20 having a square-lattice structure including using a checkerboard pattern for the color filter array pattern. (see FIGs. 3-4; col. 5, lines 32-61). Specifically, Parulski states that "...the sensor 20...comprises a two-dimensional array of photosites 66, e.g. photodiodes, arranged in rows and columns of image pixels...each pixel is 9 microns 'square', since both the vertical and horizontal distances between the centers of adjacent pixels are 9 microns...the sensor uses a color filter array pattern known as the 'Bayer checkerboard' pattern...shown in FIG.

4...characterized by a mosaic pattern in which the filter colors alternate in both line and column directions." (see FIGs. 3, 4; col. 5, lines 32-36, 44-52, 57-61).

Parulski expressly uses a "square"-lattice structure for the sensor image pixels 20 which have a "checkerboard" color filter array pattern in strong contrast to the color filters assigned to the color G being arranged in vertical stripes, the color filters assigned to the colors R and B being arranged diagonally with respect to the color filters assigned to the color G, wherein each of a plurality of photosensitive cells, having one-to-one correspondence to the color filters, being shifted in position by half a pitch from adjoining ones of said photosensitive cells.

Parulski's express disclosure of a "square", "checkerboard" pattern for the color filters (including colors R, B, G) makes the recited feature of the color G being arranged in vertical stripes, and the colors R and B being arranged diagonally with respect to the color G non-obvious from the cited reference.

Similarly, Alston fails to disclose the recited features. In contrast, Alston discloses another electronic camera using a square-lattice structure for the sensor image pixel array 14. (see FIG. 1; col. 2, lines 59-64). Specifically, Alston states that "...an electronic camera...comprising a high resolution two-dimensional image sensing array 14...comprises a predetermined number of discrete image sensing areas or pixels arranged in vertical columns and

horizontal rows wherein each column is superposed by either a green, red or blue filter arranged in a well-known manner as shown in the drawing." (see FIG. 1; col. 2, lines 52-53, 56-57, 59-64).

Alston's disclosure of a square-lattice structure (the color pixels being arranged in vertical columns and horizontal rows from each other) for the sensor array 14 is significantly distinct from the recited feature of the color G being arranged in vertical stripes, and the colors R and B being arranged diagonally with respect to the color G, and wherein each of a plurality of photosensitive cells, having one-to-one correspondence to the color filters, being shifted in position by half a pitch from adjoining ones of said photosensitive cells, making the recited feature non-obvious from the cited reference.

Also, Chang fails to disclose the recited features. In contrast, Chang discloses an electronic camera system using a square-lattice structure for the array 16 of sensor image pixels. (see FIG. 1; col. 3, lines 38-43). Specifically, Chang states that "...a camera system 10...comprises...charge coupled device (CCD) sensor 16...CCD sensor 16 has an array of photosensors 20 arranged in rows and columns...sensor 16 may be the Kodak KAI1000, with an array of 1024 X 1024 photosensors." (see FIG. 1; col. 2, lines 20, 23-24, 38-43).

Chang's disclosure of a square-lattice structure (the photosensors being arranged in rows and columns, preferably 1024 X

1024) for the sensor array 16 is significantly distinct from the recited feature of the color G being arranged in vertical stripes, and the colors R and B being arranged diagonally with respect to the color G, and wherein each of a plurality of photosensitive cells, having one-to-one correspondence to the color filters, being shifted in position by half a pitch from adjoining ones of said photosensitive cells, making the recited feature non-obvious from the cited reference.

Parulski, Alston, and Chang, either alone or in combination, fail to disclose the recited features making the claimed invention non-obvious from the cited references.

Conclusion

In view of the amendments and remarks submitted above, it is respectfully submitted that all of the remaining claims are allowable and a Notice of Allowance is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayments to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

The Examiner is invited to contact the undersigned at (703)
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Respectfully submitted,

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